

SECONDARY CONSTANTS OF LOADED CABLE
24 GAUGE DSM, FSM
D88 LOADING

At 68° F. *

Freq. Hertz	Propagation Constant Per Mile			Mid-Section Impedance			
	Attenuation		Phase Shift β Radians	R Ohms	X Ohms (Neg.)	Z Ohms	Angle Degrees (Neg.)
	α Nepers	dB					
1	.00938	.082	.00803	17492	14905	22981	40.4
50	.05801	.504	.06485	2456	2180	3284	41.6
100	.07744	.673	.09714	1838	1458	2346	38.4
200	.09817	.853	.1532	1451	926	1721	32.5
300	.1088	.945	.2075	1311	685	1479	27.6
500	.1185	1.029	.3178	1209	449	1290	20.4
800	.1234	1.072	.4895	1174	294	1211	14.1
1000	.1247	1.083	.6072	1175	239	1199	11.5
1200	.1253	1.089	.7273	1185	202	1202	9.7
1400	.1256	1.091	.8498	1201	176	1214	8.3
1600	.1257	1.092	.9751	1224	157	1234	7.3
1800	.1257	1.092	1.1037	1254	143	1262	6.5
2000	.1257	1.092	1.2360	1291	133	1297	5.9
2200	.1258	1.093	1.3729	1336	126	1342	5.4
2400	.1260	1.094	1.5154	1393	122	1398	5.0
2500	.1262	1.096	1.5891	1426	121	1432	4.9
2600	.1265	1.098	1.6647	1464	121	1469	4.7
2700	.1269	1.102	1.7424	1507	123	1512	4.7
2750	.1271	1.104	1.7821	1530	124	1535	4.6
2800	.1274	1.107	1.8225	1555	125	1560	4.6
3000	.1292	1.122	1.9915	1676	136	1681	4.6
3200	.1325	1.151	2.1754	1841	158	1848	4.9
3500	.1438	1.249	2.4944	2256	247	2270	6.3
3900	.2285	1.985	3.1083	3967	1470	4231	20.3

* Temperature Variation Per Degree F.

Hz	dB	Rad.	R	X
300	.0017	.00014	.433	-1.050
1000	.0024	.00018	-.033	-.481
3000	.0021	.00055	.221	-.333

Notes: Nominal cutoff frequency = 4000 Hz.
Phase Delay = 96.64×10^{-6} seconds/mile at 1000 Hz.
Velocity of propagation = 10.35×10^3 miles/second at 1000 Hz.

END-SECTION IMPEDANCE

End Section \ Frequency (Hz)	300		1000		1600		2000	
	R	X	R	X	R	X	R	X
0 (Full Coil)	1308	-597	1107	+ 54	1035	+315	976	+ 462
.1	1310	-616	1133	- 2	1102	+240	1079	+ 385
.2	1311	-634	1153	- 60	1157	+152	1169	+ 282
.3	1312	-651	1167	-119	1198	+ 54	1240	+ 157
.4	1312	-668	1174	-179	1221	- 51	1283	+ 15
.5 (Mid Section)	1311	-685	1175	-239	1224	-157	1291	- 133
.6	1310	-701	1170	-297	1211	-260	1267	- 275
.7	1308	-718	1159	-353	1181	-355	1214	- 402
.8	1306	-733	1143	-405	1138	-439	1140	- 507
.9	1303	-749	1122	-454	1085	-511	1055	- 587
1.0 (Full Section)	1300	-763	1098	-499	1026	-569	966	- 643

End Section \ Frequency (Hz)	2500		2750		3000		3500	
	R	X	R	X	R	X	R	X
0 (Full Coil)	880	+634	820	+719	748	+803	555	+ 977
.1	1035	+575	1001	+679	957	+793	797	+1074
.2	1189	+468	1196	+580	1200	+715	1156	+1117
.3	1322	+308	1377	+407	1448	+534	1647	+ 992
.4	1409	+104	1503	+160	1633	+233	2135	+ 520
.5 (Mid Section)	1426	-121	1530	-124	1676	-136	2256	- 247
.6	1376	-335	1456	-392	1562	-477	1891	- 879
.7	1272	-511	1308	-596	1348	-712	1386	-1130
.8	1138	-635	1131	-723	1113	-832	987	-1139
.9	999	-710	959	-785	905	-868	718	-1058
1.0 (Full Section)	870	-747	809	-801	738	-855	543	- 957